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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,122	06/29/2000	Herbert Edelsbrunner	9220-2	7255

20792 7590 03/17/2004

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EXAMINER

BRODA, SAMUEL

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/607,122

Applicant(s)

EDELSBRUNNER ET AL.

Examiner

Samuel Broda

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-51 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-22, 36-40, 42-44, and 46, drawn to methods, computer program products, and apparatuses for modeling a surface of an object, including edge contractions to generate a hierarchy of progressively coarser triangulations of the surface, classified in class 703, subclass 2.
 - II. Claims 23-27 and 31-33, drawn to methods for generating a model of an object, including automatically decomposing a first triangulated model into a second quadrangulated model, classified in class 703, subclass 1.
 - III. Claims 28-30 and 47-49, drawn to methods for generating a model of an object, including defining or detecting a boundary of a hole in the model, classified in class 703, subclass 1.
 - IV. Claims 34-35, drawn to a method for generating a model of an object, including applying a first quadrangulated surface as a template to a second object, classified in class 703, subclass 1.
 - V. Claims 41, 45, and 50-51, drawn to a method, computer program product, and apparatus for modeling a surface of an object, including conversion of a first triangulation of a surface into a second triangulation by contracting a first edge, classified in class 703, subclass 2.

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1.1 Inventions of Groups I through V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable.

In the instant case, the invention of Group I has separate utility such as the ranking of the hierarchy of triangulations permitting a user to compile a history of modeling iterations for review. The invention of Group II has separate utility such as the automation of the decomposition of a first model into a second model thus requiring no user intervention. The invention of Group III has separate utility such as the modelling of a surface containing holes or discontinuities, or the correction of the model due to rounding or measurement errors. The invention of Group IV has separate utility such as the rapid modeling of a set of objects through using the first model as a template for subsequent models. Finally, the invention of Group V has separate utility such as the reduction of computing time through the single conversion of triangulations using only one contraction.

These separate uses distinguish the invention of each of Groups I through V from one another. Therefore, the invention of each of Groups I through V is a separately useable subcombination. See MPEP § 806.05(d).

1.2 Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and/or recognized divergent subject matter, restriction for examination purposes as indicated is proper.

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1.3 Because the requirement for restriction is complex, no telephone communication was made. See MPEP § 812.01.

1.4 Applicants are reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

1.5 Applicants are advised that a reply to this requirement must include an election of the invention to be examined, even though the requirement may be traversed under 37 CFR 1.143.

2. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Samuel Broda, whose telephone number is (703) 305-1026. The Examiner can normally be reached on Mondays through Fridays from 8:00 AM – 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached on (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.



SAMUEL BRODA, ESQ.
PRIMARY EXAMINER